Shades of Green: School energized for future

Inderkum High's eco design seen as a way to help planet and reduce costs -- and it may also improve learning. Just ask the students.

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It's lunchtime at Inderkum High School in Sacramento's Natomas neighborhood, and most students are indoors.

Oval-shaped lunch tables are clumped together in a spacious room, known to students and staff as "the atrium," where daylight streams through big windows and a giant skylight cut out of the high ceiling.

Junior Katie Pool pointed to the skylight and noted its shape -- a tiger's eye, the school's mascot. The windows are her favorite feature.

"I sit here at lunch, and I can see the clouds," Pool said.

Students, teachers and Natomas Unified School District officials see the future in Inderkum's atrium and its other green features.

"There's solar paneling that provides electricity," said the 17-year-old Pool. "There are the round pillars in the atrium, which is our air conditioning and heating, and it's powered by geothermal energy."

There is momentum building worldwide for environmentally sound school designs. Increasingly, green schools are viewed as sound investments in the environment, student performance and the bottom line.

Now, schools looking to incorporate green design into new or revamped buildings can apply for state funding. The state Department of General Services' Office of Public School Construction (OPSC) said last week that schools can apply for $100 million in High Performance Incentive Grants. High performance schools are defined as those that feature energy- and resource-efficient classrooms.
"Studies have shown that there's a 20 percent improvement in math and reading test scores for students in well lit classrooms," said Rob Cook, an executive officer with OPSC. "Maximizing natural light is a great element to integrate into schools."

Cook said schools with green plans can submit applications through the normal budget process. The state agency will award funds for specific green projects in early 2008.

The Natomas Unified School District has a head start. In 2005, the school district passed a resolution to build more green schools and has already put up or planned environmentally minded buildings.

Michael Cannon, Natomas Unified's assistant superintendent for facilities and planning, said the district will apply in the next few days to get funding for completion of the H. Allen Hight Learning Center.

That project uses green standards set by the Collaborative for High Performance Schools (CHPS) -- which certifies green schools -- that call for using recycled building materials and low-emission adhesives and paints for better indoor air quality. The project, about halfway finished, will be a combined elementary and middle school.

"It's another form of efficiency," Cannon said, "You'll have one building for administrative offices, instead of two, a shared combination multipurpose room, gym, food service building, and one set of athletic fields instead of two."

A lighter carbon footprint is already on display at Inderkum High.

Tatiana Aguilar, 15, said she appreciates the abundance of natural light inside the school.

"It's not as gloomy. I feel more awake," she said.

On a tour of the school, students are quick to point to heating and cooling columns -- white and blue metal cylinders -- popping up from the ground like trees around the atrium.

"It comes from the bottom and depends on the weather," said Julian Scott, 17, explaining how the geothermal pillars work. "If it's cold (outside), heat is stored underneath, and the heat goes up through the vent. If it's hot (outside), the cold air from underground rises up through the vent."

Teacher Chris Castro said he uses the heating and cooling pillars in his chemistry and earth science classes to illustrate the unique properties of water.

The school taps the natural heating and cooling of the groundwater vent system in the atrium to trim its use of a central heating and cooling system.

From the rooftop, solar panels supply about 35 percent of the school's power need. According to Cannon, the panels have shaved about 15 percent to 20 percent from energy bills. The school is looking into upgrading the current panels with more efficient, next-generation solar panels.

In his classroom, Castro tried to show his students that there is no perfect renewable energy.

"With solar energy, where do solar panels come from? What energy is involved in making solar panels and recycling them? ... Even solar panels need to be maintained, because they wear out. Do we recycle them or do they go into landfills?"